



Letter to the Editor

Aluminum & cardiac arrhythmias; occupational medicine aspect of a case report



Dear Editor,

We read with interest the case report about cardiac arrhythmias in an aluminum worker published in the JFLM.¹ In this study, authors consider the occupational etiologies in clinical assessment of the patient. They also take into account the occupational related disease after considering the underlying condition with echocardiography and angiography. In addition, they rule out the lead poisoning as an important differential diagnosis.

However, we believe addressing the following questions will clarify the case study further:

- Does the patient have pre-employment or/and periodic examination documents? How is this information filed in the country of origin (in this case Turkey)?
- In which type of foundry industry does/did the patient work? It is very important because of special hazards of each type.
- What position did the patient hold (exact job title)? Some helpful information about the worker's breathing zone measurement of aluminum fume or dust may be derived from occupational medicine surveillances.
- Have symptoms of aluminum toxicity been found in the co-workers (at present or in the past)?

The issue of aluminum toxicity is of interest due the following reasons:

- No arrhythmogenic effect for acute or chronic aluminum exposure has been reported in the occupational medicine references.^{2–5}
- Cardiac arrhythmia has been usually reported in persons who are poisoned by aluminum phosphide because of the phosphide component. In most of the references provided by the case report, not elemental aluminum but aluminum phosphide has been discussed as an arrhythmogen⁶ and we believe they could hardly be applicable to the current patient.
- To the best of our knowledge, in foundry workers, special attention should be paid to arsenic as an important and confirmed cause of arrhythmia.^{2–4} Did the authors rule out arsenic toxicity?

It is known that removal from impermissible exposure – not necessarily changing the job – is the primary treatment in aluminum-exposed worker. In real practice, “advising to change the job” is very difficult and even impossible in most cases. Therefore, advising to change the job should be reserved unless the following alternatives are exhausted:

- 1) Engineering control
- 2) Control on human behavior (administrative control or work practices control)

3) Personal protective equipments (PPEs)¹

It would be quite helpful to learn about the potential change in the long term symptoms after keeping the patient away from the exposure. Perhaps it can be the subject of a follow up report.

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Conflicts of interest

None declared.

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